

TABLE OF CONTENTS ~ PRELIMINARY

- 3.2.10 Permits and approval
 - 3.2.10.1 Waterway
 - 3.2.10.2 Railroad
 - 3.2.10.3 Highway
-

3.2.10 Permits and approvals

Iowa DOT projects are subject to federal and state laws and regulations and approval by agencies outside of the Iowa DOT. The majority of the permits and approvals apply to work in or over waterways, but there are also approvals applicable to railroad and highway grade separations.

3.2.10.1 Waterway

This article covers waterway requirements related to the following permits and coordination:

- Iowa Department of Natural Resources (Iowa DNR) Flood Plain Construction Permits (also called Flood Plain Development Permits),
- Records of Coordination of Flood Plain Development for cities and counties that participate in the National Flood Insurance Program (NFIP),
- Iowa DNR Sovereign Lands Construction Permits,
- Corps of Engineers 404 Permits,
- Corps of Engineers 408 Permits,
- Corps of Engineers 208.10 Approval, and
- Coast Guard Permits.

For a bridge or large culvert over a waterway the designer is obligated to meet the requirements of the Iowa DNR and other government agencies. Cases that require an Iowa DNR permit are summarized from the Iowa Administrative Code (IAC) in Table 3.2.10.1-1. Please review the DNR website for checklist and other required submittal information.

Table 3.2.10.1-1. Iowa DNR Flood Plain Construction Permit requirements (summary of IAC 567—Chapter 71)

Project Type	Location	Construction Permit Required? Yes, if drainage area meets threshold.
Bridges, culverts, or road embankments that cross the stream	Rural area ⁽¹⁾ – floodway	100 square miles or more
	Urban area ⁽²⁾	2 square miles or more
Road embankments that do not cross the stream	Rural area ⁽¹⁾ – floodway and flood plain	10 square miles or more if obstructing 3% or more of the channel, or 15% or more of the flood plain
Channel changes ⁽³⁾	Rural area ⁽¹⁾ not associated with a road project	10 square miles or more
	Rural area ⁽¹⁾ associated with a road project	10 square miles or more if (1) more than 500 feet of channel is being altered or (2) length of existing channel is reduced by more than 25%
	Urban area ⁽²⁾	2 square miles or more
	Protected streams ⁽⁴⁾	Any area
Bank stabilization	Rural area ⁽¹⁾	100 square miles or more
		10 to 100 square miles if channel cross section is being reduced by 3% or more
	Urban area ⁽²⁾	100 square miles or more
Levees, dams (ponds), flood plain excavation, or stockpiling	Varies ⁽⁵⁾	2 to 100 square miles if channel cross section area is being reduced by 3% or more
		Varies ⁽⁵⁾

Table notes:

- (1) Rural area is defined as any area not defined or designated as an urban area.
- (2) Urban area is defined as an incorporated municipality.
- (3) Channel change means either (a) the alteration of the location of a channel of a stream or (b) a substantial modification of the size, slope, or flow characteristics of a channel of a stream for a purpose related to the use of the stream's flood plain surface.... Increasing the cross-sectional area of a channel by less than 10 percent is not considered a substantial modification of the size, slope, or flow characteristics of a channel of a stream. See IAC 567—70.2.
- (4) See IAC 567—Chapter 72 for a list of protected streams. Because petitioners may request that streams be added to the list at any time, the designer should contact the Iowa DNR regarding updates to the list if a project involves channel changes.
- (5) See IAC 567—Chapter 71.

Through the permit process the Iowa DNR ensures that a bridge project meets the requirements of Flood Insurance Studies (FIS) of cities and counties participating in the National Flood Insurance Program (NFIP).

Any project on a stream that does not meet the drainage area thresholds in Table 3.2.10.1-1 does not require this type of permit or approval from the Iowa DNR. However, if the project is in a city or county that is participating in the NFIP, the designer shall perform a hydraulic review and coordinate with the community to ensure compliance with the NFIP. The designer shall complete a Record of Coordination of Floodplain Development form [BDM 3.2.11 and IDOT PPM 500.10] and forward copies of the form to the Iowa DNR and the appropriate District Engineer. The coordination effort is not considered a permit from the community. A complete list of cities and counties in the NFIP and status of their flood insurance studies is available [at the following FEMA web site: from the Iowa DNR.](#)

<http://www.fema.gov/fema/csb.shtm>

For a bridge that requires a Flood Plain Construction Permit the Iowa DNR establishes maximum backwater and minimum freeboard limits, and the limits are summarized in Table 3.2.10.1-2. If the structure exceeds the maximum backwater limits, the Iowa DNR may require that the Iowa DOT obtain flowage easements for the excess backwater.

Table 3.2.10.1-2. Iowa DNR backwater and freeboard requirements for bridges and culverts (summary of Iowa Administrative Code 567—Chapter 72)

Bridges and Associated Channel Changes ⁽¹⁾			
Damage Potential	Maximum Backwater		Minimum Freeboard
	Q ₅₀ and less	Q ₁₀₀	
Low ⁽²⁾	0.75 feet	1.5 feet	3.0 feet above Q ₅₀
Moderate ⁽³⁾	0.75 feet	1.0 feet	3.0 feet above Q ₅₀
High ⁽⁴⁾ or Maximum ⁽⁵⁾	0.75 feet ⁽⁶⁾	1.0 feet ⁽⁶⁾	3.0 feet above Q ₅₀
Culverts and Associated Channel Changes ⁽¹⁾			
Culvert Type	Maximum Backwater		Minimum Freeboard
New culverts or culverts replacing bridges	Same as for bridges		
Culverts replacing culverts	Backwater of existing culvert, or maximum backwater allowed for bridges, whichever is greater		

Table notes:

- (1) These rules are applicable to channel changes on the floodway of any stream draining between 10 and 100 square miles when either (a) more than 500 feet of the existing channel is being altered or (b) the length of the existing channel is being reduced by more than 25 percent.
- (2) Low damage potential means all buildings, building complexes, or flood plain use not defined as maximum, high, or moderate damage potential. See IAC 567—70.2.
- (3) Moderate damage potential means flood damage potential associated with industrial and commercial buildings or building complexes containing readily movable goods, equipment, or vehicles and seasonal residential buildings or building complexes of which flooding would not result in high public damages.... See IAC 567—70.2.
- (4) High damage potential means the flood damage potential associated with habitable residential buildings or industrial, commercial, or public buildings or building complexes of which flooding would result in high public damages.... See IAC 567—70.2.
- (5) Maximum damage potential means the flood damage potential associated with hospitals and like institutions; buildings or building complexes containing documents, data, or instruments of great public value; buildings or building complexes containing materials dangerous to the public or fuel storage facilities; power installations needed in emergency or buildings or building complexes similar in nature or use to those listed above. See IAC 567—70.2.
- (6) Backwater cannot exceed these values and must be minimized when it affects buildings, flood control works, etc., unless increase is mitigated or other measures are taken. See IAC 567—72.1(3).
- (7) The Iowa DNR may evaluate freeboard on a case-by-case basis if debris and ice are a problem.

Any construction activity on, above, or under state-owned water and land requires an Iowa DNR Sovereign Lands Construction Permit. This permit is different from the Flood Plain Development Permit. There are portions of 14 rivers in Iowa that are legally classified as “meandered”, which means the State

of Iowa owns the streambed and banks up to the ordinary high water mark. The meandered rivers are listed in the commentary for this article [BDM C3.2.10.1]. Submit a copy of the flood plain permit cover letter, joint application and the proposed plans to the Sovereign Lands Construction Permit Program for all projects that require DNR flood plain permit approval, even if it does not require a Sovereign Lands Construction Permit.

A Corps of Engineers 404 Permit is needed for all bridges over water, major highway projects, and stream bank repair projects. The designer should notify the Office of Location and Environment when the preliminary situation plan for a bridge is complete. The Office of Location and Environment will complete and submit a "Joint Application Form (Form 36)" [BDM 3.2.11] that will request the Corps of Engineers 404 Permit.

The Corps of Engineers also has requirements under 33 USC Section 408 to ensure that project modifications within a critical area of a Flood Risk Reduction Project (FRRP) constructed by the U.S. Army Corps of Engineers do not adversely impact the operation or integrity of the FRRP. The critical area is generally defined as 300' riverward to 500' landward of a FRRP centerline, but may be a greater distance if identified in a specific Operations and Maintenance Manual. If the proposed project does not change the level of protection or the authorized structural geometry or hydraulic capacity, the project may be approved under 33 CFR Section 208.10. Bridge replacement projects typically do not change the alignment or elevation of a flood protection levee. Therefore, most bridge projects will be considered a minor impact to the FRRP, but will still require Section 208 approval. Most bridge projects can be reviewed by the Corps with submittal of a TS&L and concurrence from the local agency in support of the project. The District will obtain concurrence from the local agency for the project, and preliminary bridge design will submit the Section 208 application. If the physical characteristics of the flood protection levee are modified or the operation or hydraulic capacity of the FRRP is changed, a more detailed submittal and review of the project will be required under Section 408.

~~The Section 408 submittal requires a coordinated effort between the Bridge Office, Office of Design and Office of Location and Environment. Bridge replacement projects typically do not change the alignment or elevation of a flood protection levee. Therefore, most bridge projects will require a Section 408 approval. Most bridge projects can be reviewed by the Corps with submittal of a T,S&L and concurrence from the local agency in support of the project. The District will obtain concurrence from the local agency for the project. However, any project over, under or through a FRRP will need approval under 33 CFR Section 208.10. If the physical characteristics of the flood protection levee are modified, Section 408 approval may be required.~~

The U.S. Coast Guard requires a permit for all projects over the Mississippi and Missouri Rivers. Appropriate horizontal and vertical clearances for the navigation channel shall be coordinated with the USCG during preliminary design. A letter from the USCG documenting the design criteria is desired for the file. Bridge Final Design submits the USCG permit application. The link to the permit application guide is: <http://www.uscg.mil/d8/westernriversbridges/permitapplicationguide.asp>.

3.2.10.2 Railroad

All bridges over railroads shall be reviewed and approved by the railroad company. The Office of Bridges and Structures (OBS) preliminary designer is referred to article 3.2.4.4 for railroad bridge submittal requirements.

3.2.10.3 Highway

In some cases Federal Highway Administration (FHWA) approval is required for federal funding programs. FHWA approval is required for major interstate projects or projects with modified interchanges. On a case by case basis, FHWA would also like to review bridges that are unique or controversial due to environmental or ROW issues. (Estimated contract value is no longer a consideration.)

The Office of Bridges and Structures will coordinate the FHWA approvals. The OBS preliminary designer shall submit a copy of the transmittal form and preliminary situation plan to the FHWA.